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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,764	09/17/2003	Nobuhiro Kira	107355-00087	3831

7590 06/22/2006

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EXAMINER	
PHAN, HAU VAN	
ART UNIT	**PAPER NUMBER**
3618	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,764	KIRA ET AL.	
	Examiner	Art Unit	
	Hau V Phan	3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2006*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) *7 and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8 and 10-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgment

1. The amendment filed on 5/13/2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6, 8 and 10-11, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaper (5,934,397) in view of Voland et al. (3,575,621).

Schaper in figures 3-11, discloses a hybrid vehicle comprising an engine (52) for driving main driving wheels (48), and a plurality of motors (34, 36, 38) for driving sub driving wheels (33), wherein at least one motor is selected from the plurality of motors to drive the sub driving wheels according to driving force required by the vehicle. Schaper fails to show a speed reduction member.

Voland et al. in figure 3, teach drive means having a structure, which can be used on a vehicle comprising motors (12, 14) having a speed reduction gear (16), which is connected to the motor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hybrid vehicle having a plurality of

motors of Schaper with the motors having a speed reduction gear as taught by Voland et al. in order to reduce the speed of the motors.

Regarding claim 2, Schaper discloses the sub driving wheels, which are driven by all the motors at low speed where the driving force required by the vehicle is large (col. 6, line 29-37, Schaper discloses the used of all the motors during a pulling of heavy load, the vehicle should be at the low speed when in heavy load).

Regarding claim 3, Schaper discloses a main motor (36) having a large output and a sub motor (34) having a small output. The sub motor being disposed on an upstream side of the main motor to a direction in which the driving force is transmitted to the sub driving wheels.

Regarding claim 4, Schaper discloses a clutch (72) for interrupting the transmission of driving force, which is disposed between the sub motor and the main motor.

Regarding claim 5, Schaper discloses the plurality of motors and each motor is independently connected to batteries (32). It should be noticed that the motor with higher output should be connected to a high-voltage battery and the motor with lower output should be connected to a lower voltage battery.

Regarding claim 6, Schaper discloses the plurality of motors having a main motor and a sub motor and wherein a battery for driving the main motor is charged with regenerative power of the main motor and the sub motor is driven by generated output of a generator (54), which is driven by the engine. (During the pull of the heavy load).

Regarding claim 10, Kuroda et al. teach a motor, which are connected to the sub driving wheels via the speed reduction member.

Regarding claim 11, Voland et al. teach the speed reduction member comprising a first gear operationally connected to the sub motor and a second gar operationally connected to the main motor.

Regarding claim 13, Voland et al. teach the second gear, which is operationally connected to a differential via a synchromesh clutch.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaper (5,934,397) in view of Voland et al. (3,575,621) as applied to claim 11 above, and further in view of Toyoda et al. (5,289,890).

The combination of Schaper and Voland et al. disclose the first gear, but fail to show an electromagnetic clutch.

Toyoda et al. in figures 17-18 prior art of record, teach a drive unit for electric motor vehicle having an electromagnetic clutch (47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hybrid vehicle having a plurality of motors of Schaper in view of Voland et al. with the drive unit having an electromagnetic as taught by Mizushina et al. in order to selectively outputting driving torque of sole motor and combined torque of both motors.

5. Claims 1-6, 8 and 10-11, 13 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Schaper (5,934,397) in view of Sekiya et al. (6,349,782).

Schaper in figures 3-11, discloses a hybrid vehicle comprising an engine (52) for driving main driving wheels (48), and a plurality of motors (34, 36, 38) for driving sub driving wheels (33), wherein at least one motor is selected from the plurality of motors to drive the sub driving wheels according to driving force required by the vehicle. Schaper fails to show a speed reduction member.

Sekiya et al. in figures 2-3, teach drive means having a structure, which can be used on a vehicle comprising motors (Mr, Ml) having a speed reduction gear (D), which is connected to the motor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the hybrid vehicle having a plurality of motors of Schaper with the motors having a speed reduction gear as taught by Sekiya et al. in order to reduce the speed of the motors.

Regarding claim 2, Schaper discloses the sub driving wheels, which are driven by all the motors at low speed where the driving force required by the vehicle is large (col. 6, line 29-37, Schaper discloses the used of all the motors during a pulling of heavy load, the vehicle should be at the low speed when in heavy load).

Regarding claim 3, Schaper discloses a main motor (36) having a large output and a sub motor (34) having a small output. The sub motor being disposed on an upstream side of the main motor to a direction in which the driving force is transmitted to the sub driving wheels.

Regarding claim 4, Schaper discloses a clutch (72) for interrupting the transmission of driving force, which is disposed between the sub motor and the main motor.

Regarding claim 5, Schaper discloses the plurality of motors and each motor is independently connected to batteries (32). It should be noticed that the motor with higher output should be connected to a high-voltage battery and the motor with lower output should be connected to a lower voltage battery.

Regarding claim 6, Schaper discloses the plurality of motors having a main motor and a sub motor and wherein a battery for driving the main motor is charged with regenerative power of the main motor and the sub motor is driven by generated output of a generator (54), which is driven by the engine. (During the pull of the heavy load).

Regarding claim 10, Kuroda et al. teach a motor, which are connected to the sub driving wheels via the speed reduction member.

Regarding claim 11, Sekiya et al. teach the speed reduction member comprising a first gear operationally connected to the sub motor and a second gar operationally connected to the main motor.

Regarding claim 13, Sekiya et al. teach the second gear, which is operationally connected to a differential via a synchromesh clutch.

Response to Arguments

6. Applicant's arguments with respect to claims 1-6, 8, 10-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau V Phan whose telephone number is 571-272-6696. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on 571-272-6914. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hau V Phan
Primary Examiner
Art Unit 3618

Hau Phan
6/19/06